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EXAMINER	
LEUNG, CHRISTINA Y	

ART UNIT	PAPER NUMBER
2633	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/003,653	YAMADA ET AL.	
	Examiner	Art Unit	
	Christina Y. Leung	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 14* is/are rejected.

7)☒ Claim(s) *2,4,5,8 and 11-14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 November 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20 October 2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. Figures 12-17 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 2, 4, 5, 8, 11, and 14 are objected to because of the following informalities:

Regarding claim 2, claim 2 recites "only for a part of wavelength group" in line 3 of the claim. Examiner respectfully suggests change the word "group" to "groups" in this line for grammatical reasons.

Regarding claim 4, the word "demuliplexers" (sic) in line 3 of the claim (line 2 of page 31) should be amended to "demultiplexers" in order to correct the spelling of the word. Claim 4 also recites "said second optical switch" in line 4 of the claim; Examiner respectfully notes that Applicants should amend this phrase to "said second optical switches" so that it is consistent with claim 3 on which claim 4 depends.

Regarding claim 5, claim 5 recites "into single wavelength multiplexed signal" in lines 9-10 of the claim. Examiner respectfully suggests changing the word "signal" to "signals" in this line for grammatical reasons and for consistency with claim 4 on which it depends.

Regarding claim 8, claim 8 recites "second optical switches" (for switching per wavelength group) in line 6 of the claim and recites "third optical switches" (for switching per wavelength signal) in line 11 of the claim. However, neither claim 8 nor claim 1 on which it depends recite "first" optical switches.

Although Examiner understands that the other claims similarly use the term "second optical switch" with regard to a switching per wavelength group device and the term "third optical switch" with regard to a switching per wavelength signal device, the other claims do recite a "first" switch unlike claim 8. Examiner respectfully suggests that Applicants amend claim 8 to refer to the optical switches in that claim as "first" and "second" switches instead of "second" and "third" switches so that the claim may be clearly understood on its own.

Regarding claim 11, claim 11 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants are required to cancel the claim, or amend the claim to place the claim in proper dependent form, or rewrite the claim in independent form.

Claim 11 recites "electrical switches as replacement for said third optical switches" in lines 3-4 of the claim. Claim 4, on which claim 11 indirectly depends, recites the "third optical switches" in question, and since the switches in question can only be either optical switches or electrical switches (as implicitly acknowledged in claim 11, since the claim recites "electrical switches as replacement"), dependent claim 11 does not include every limitation (i.e., third

optical switches) of the parent claims 4 and 5. A proper dependent claim shall not conceivably be infringed by anything which would not also infringe the basic claim. See MPEP 608.01(n).

Regarding claim 14, claim 14 recites "fibers not required switching" in line 3 of the claim. Examiner respectfully notes that Applicants should amend this phrase to "fibers not requiring switching" for grammatical reasons.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 6, claim 6 recites "said wavelength multiplexers" in line 3 of the claim. There is insufficient antecedent basis for this limitation in the claim because claim 5 on which claim 6 depends only recites "wavelength multiplexer" (single) in line 3 of that claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Noirie et al. ("Multi-granularity Optical Cross-Connect," ECOC 2000. 3-7 Sept. 2000, Proceedings of 26th European Conference on Optical Communication, vol. 3, pp. 269-270).

Regarding claim 1, Noirie et al. disclose an optical cross-connecting device for switching wavelength multiplexed signals input from a plurality of optical fibers (Figure 2), comprising:

switching means (the switch shown in Figure 2, including Band Cross-Connect BXC) for switching per only wavelength group (also known as a wavelength "band") for a part of a plurality of the wavelength multiplexed signals (see section "Multi-granularity optical cross-connects" on page 269).

Examiner notes that Noirie et al. specifically disclose that the per group/band switching may occur for "a part of a plurality of the wavelength multiplexed signals" as recited in the claim, since they disclose that that the wavelength multiplexed signals on the fibers first enter a Fiber Cross-Connect FXC and a part of them may be switched to the BXC for group-switching while a part of them may continue directly to the output fibers (again, see section "Multi-granularity optical cross-connects" on page 269).

Regarding claim 2, Noirie et al. disclose that the switching means switches per wavelength signal only (using Wavelength Cross-Connect WXC) for a part of wavelength group after switching per the wavelength groups.

As similarly discussed with regard to claim 1, Noirie et al. disclose that per wavelength switching may occur "for a part of wavelength group" (sic) as recited in the claim, since they disclose that the wavelength groups may either be switched by the BXC to the WXC for per wavelength switching or passed directly to the outputs of the BXC.

Regarding claim 7, Noirie et al. disclose an optical cross-connecting device for switching wavelength multiplexed signals input from a plurality of optical fibers (Figure 2), comprising:

switching means (the switch shown in Figure 2, including Band Cross-Connect BXC) for performing switching per wavelength group (i.e., per wavelength "band") for a plurality of the wavelength multiplexed signals input from the fibers.

Noirie et al. further disclose that the switching means performs switching per only wavelength group for a part of a plurality of wavelength groups after (the aforementioned) switching as recited in the claim, since the switching means they disclose operates continuously and continues to perform switching per only wavelength group for a plurality of wavelength groups such as additional multiplexed signals (comprising wavelength groups) input from the fibers. Examiner notes that the claim does not specifically recite where "a plurality of wavelength groups" may originate from.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 3-5, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noirie et al. in view of Wu et al. (US 6,005,697 A) and Kuo et al. (US 6,493,119 B1).

Regarding claim 3, Noirie et al. disclose that the switching means comprises:

a first optical switch (Fiber Cross-Connect FXC) for switching per the wavelength multiplexed signal for the wavelength multiplexed signals input from a plurality of the optical fibers;

first wavelength group demultiplexers (the demultiplexers shown in Figure 2 which provide outputs to the BXC and are labeled "Demux F-to-B," i.e., fiber level to band level demultiplexers) for dividing a part of a plurality of wavelength multiplexed signals output from the first optical switch into a plurality of wavelength groups; and

a second optical switch (Band Cross-Connect BXC) for switching per wavelength groups for the divided wavelength groups.

Noirie et al. do not specifically disclose multiple second optical switches for switching per wavelength groups. However, it is well known that a large switch matrix with a plurality of inputs and outputs like the BXC disclosed by Noirie et al. may comprise an interconnected plurality of smaller switches. Wu et al. in particular teach implementing a larger switch matrix structure with a plurality of smaller switches (Figure 1b, which includes smaller switches 25; column 3, lines 41-57). Kuo et al. also teach implementing a switch matrix using a plurality of smaller switches (Figure 1, which includes smaller switches $13_{1\text{-}M}$; column 2, lines 35-52). Kuo et al. further teach that using smaller switches reduces the complexity of the switching system (column 4, lines 28-37) and allows the system to be easily expanded or repaired (column 1, lines 43-47; column 4, lines 38-55).

It would have been obvious to a person of ordinary skill in the art to use plurality of switches as taught by Wu et al. and Kuo et al. to implement the per wavelength group switch matrix (i.e., the second optical switch) in the system disclosed by Noirie et al. in order to

efficiently construct the necessary switching interconnections with increased flexibility and reduced complexity (compared to a large, single switching component). One in the art would have been particularly motivated to use a plurality of smaller switches as taught by Wu et al. and Kuo et al. so that a failed connection in the switch matrix may be more efficiently and easily repaired by replacing only one small component instead of the entire switch.

Regarding claim 4, Noirie et al. disclose that the switching means further comprises:

wavelength demultiplexers (the demultiplexers shown in Figure 2 which provide outputs to the WXC and are labeled "Demux B-to-W," i.e., band level to wavelength level demultiplexers) for dividing a part of a plurality of the wavelength groups into individual wavelength signals output from the second optical switch (i.e., the band-level switch BXC); and

a third optical switch (Wavelength Cross-Connect WXC) for switching per wavelength signal and adding/dropping for individual wavelength signals output from the wavelength demultiplexers (Figure 2 also shows adding and dropping from the WXC).

Noirie et al. do not specifically disclose multiple third optical switches for switching per individual wavelength signal. However, as similarly discussed above with regard to claim 3, Wu et al. and Kuo et al. each teach that a large switch matrix with a plurality of inputs and outputs like the WXC disclosed by Noirie et al. may comprise an interconnected plurality of smaller switches. It would have been obvious to a person of ordinary skill in the art to use plurality of switches as taught by Wu et al. and Kuo et al. to implement the per wavelength switch matrix (i.e., the third optical switch) in the system disclosed by Noirie et al. in order to efficiently construct the necessary switching interconnections with reduced complexity and to allow the switch matrix to be more easily expended and repaired.

Regarding claim 5, Noirie et al. disclose that the switching means further comprises:

wavelength multiplexer (the multiplexers which receive outputs from the WXC and are labeled "Mux W-to-B," i.e., wavelength level to band level multiplexers) for multiplexing individual wavelength signals output from the third optical switches (WXC, which may comprise multiple switches as taught by Wu et al. and Kuo et al.) into wavelength groups to input to the second optical switches (BXC, which may comprise multiple switches as taught by Wu et al. and Kuo et al.); and

first wavelength group multiplexers (the multiplexers which receive outputs from the BXC and are labeled "Mux B-to-F," i.e., band level to fiber level multiplexers) for multiplexing wavelength groups other than the part of the wavelength groups output from the second optical switches into single wavelength multiplexed signal to input to the first optical switch.

As similarly discussed with regard to claim 2, Noirie et al. disclose that per wavelength switching may occur only for a part of wavelength groups, since they disclose that the wavelength groups may either be switched by the BXC to the WXC for per wavelength switching or passed directly to the outputs of the BXC. The Mux B-to-F disclosed by Noirie et al. are connected to the BXC and may multiplex these wavelength groups passed through the BXC.

Regarding claim 8, as well as the claim may be understood with regard to the claim objection discussed above, Noirie et al. disclose that the switching means comprises:

first wavelength group demultiplexers (Demux F-to-B) for dividing wavelength multiplexed signals input from a plurality of the optical fibers into a plurality of wavelength groups;

a second optical switch (Band Cross-Connect BXC) for switching per wavelength group for a part of a plurality of divided wavelength groups;

wavelength demultiplexers (Demux B-to-W) dividing a part of the wavelength groups output from the second optical switch BXC into respective of individual wavelength signals; and

a third optical switch (Wavelength Cross-Connect WXC) for switching per wavelength signal and adding/dropping for the individual wavelength signals output from the wavelength demultiplexers.

Examiner again notes that claim 8, which depends directly on claim 1, does not recite a "first optical switch" and recites only two types of switches.

Noirie et al. do not specifically disclose multiple second optical switches for switching per wavelength groups or multiple third optical switches for switching per individual wavelength signal. However, as similarly discussed above with regard to claims 3 and 4, Wu et al. and Kuo et al. each teach that a large switch matrix with a plurality of inputs and outputs like the BXC or WXC disclosed by Noirie et al. may comprise an interconnected plurality of smaller switches. Again, it would have been obvious to a person of ordinary skill in the art to use plurality of switches as taught by Wu et al. and Kuo et al. to implement the per wavelength group switch matrix (i.e., the second optical switch) and the per wavelength switch matrix (i.e., the third optical switch) in the system disclosed by Noirie et al. in order to efficiently construct the necessary switching interconnections with reduced complexity and to allow the switch matrices to be more easily expended and repaired.

Regarding claim 9, as similarly discussed above with regard to claim 5, Noirie et al. disclose that the switching means further comprises:

wavelength multiplexers (Mux W-to-B) for multiplexing the individual wavelength signals output from the third optical switches (WXC, which may comprise multiple switches as taught by Wu et al. and Kuo et al) into wavelength groups to input to the second optical switches; and

first wavelength group multiplexers (Mux B-to-F) for multiplexing wavelength groups other than a part of wavelength groups output from the second optical switches (BXC, which may comprise multiple switches as taught by Wu et al. and Kuo et al.) into single wavelength multiplexed signal.

Again, Noirie et al. disclose that per wavelength switching may occur only for a part of wavelength groups, since they disclose that the wavelength groups may either be switched by the BXC to the WXC for per wavelength switching or passed directly to the outputs of the BXC. The Mux B-to-F disclosed by Noirie et al. are connected to the BXC and may multiplex these wavelength groups passed through the BXC.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noirie et al. in view of Wu et al. and Kuo et al. as applied to claim 5 above, and further in view of Jue et al. ("A New Node Architecture for Scalable WDM Optical Networks," ICC '99. 6-10 June 1999. IEEE International Conference on Communications, 1999, vol. 3, pp. 1714-1718).

Regarding claim 6, as well as it may be understood with regard to 35 U.S.C. 112 discussed above, Noirie et al. in view of Wu et al. and Kuo et al. describe a system as discussed above with regard to claim 5, including wavelength demultiplexers, third optical switches for switching per wavelength, and wavelength multiplexers. They do not specifically suggest that

those elements are provided only for a particular kind of wavelength group among a plurality of wavelength groups.

However, Jue et al. disclose a system related to the one described by Noirie et al. in view of Wu et al. and Kuo et al. including switching wavelengths in wavelength multiplexed signals using wavelength demultiplexers, per wavelength switches, and wavelength multiplexers (specifically, the "Group 1" switch structure shown in Figure 2, which switches between wavelengths λ1-λ3). Jue et al. further teach that the wavelength multiplexed signal, which as shown in Figure 2 includes wavelengths λ1-λ6, may be divided into a plurality of groups/bands (two groups in Figure 2) and that the per wavelength switches may be provided only for a particular kind of wavelength group (the group with wavelengths λ1-λ3 in Figure 2).

It would have been obvious to a person of ordinary skill in the art to provide the wavelength demultiplexers, per wavelength switches, and wavelength multiplexers to a particular kind of wavelength group as taught by Jue et al. in the system described by Noirie et al. in view of Wu et al. and Kuo et al. in order to save the expense of providing unnecessary equipment for wavelength groups that contained wavelengths that did not require wavelength-level switching at that location. This system suggested by the combination of Noirie et al. in view of Wu et al., Kuo et al., and Jue et al. would also be able to process some wavelength groups (those that do not require wavelength-level switching) faster, since those groups would not travel through unnecessary switches.

11. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noirie et al. in view of Wu et al. and Kuo et al. as applied to claim 5 above, and further in view of Applicants' Admitted Prior Art.

Regarding claims 10 and 11, as well as claim 11 may be understood with regard to the claim objection discussed above, Noirie et al. in view of Wu et al. and Kuo et al. describe a system as discussed above with regard to claim 5. including third optical switches for switching per wavelength signal.

However, Applicants' admitted prior art acknowledges that several ways of implementing per wavelength signal switching are well known in the art. For example, Applicants' Figure 12 and Figure 17 each show implementations of "typical conventional" optical cross-connecting devices (Specification, page 1, lines 11-12; page 5, lines 6-7) that perform wavelength-level switching.

Regarding claim 10 in particular, Applicants' admitted prior art in Figure 17 further teaches that a wavelength switching device may comprise first and second wavelength converters at the inputs and outputs of an optical switching element (page 5, lines 8-23).

Regarding claim 11 in particular, Applicants' admitted prior art also teaches that a wavelength switching device may alternatively comprise optical receivers and optical transmitters at the inputs and outputs (respectively) of an electrical switching element.(page 5, line 24; page 6, lines 1-11).

Examiner notes that both implementations of per wavelength switching devices taught by Applicants' admitted prior art in Figure 17 are presented as alternatives to the other type of conventional per wavelength switching device that is taught by Applicants' Figure 12 and similar to the one already described by Noirie et al. in view of Wu et al. and Kuo et al. Furthermore, Noirie et al. also already generally disclose that the signals in the switches may be wavelength converted and/or regenerated (page 269, last paragraph of the right-side column).

It would have been obvious to a person of ordinary skill in the art to include either first and second wavelength converters as suggested by Applicants' admitted prior art at the third optical switches already described by Noirie et al. in view of Wu et al. and Kuo et al., or to use optical receivers and transmitters with electrical switches as the per wavelength switch described by Noirie et al. in view of Wu et al. and Kuo et al. as an engineering design choice of various ways to implement the wavelength-level switches already described in the system of Noirie et al. in view of Wu et al. and Kuo et al. The claimed differences exist not as a result of an attempt by Applicants to solve an unknown problem but merely amount to the selection of expedients known as design choices to one of ordinary skill in the art. Furthermore, it is also well known in the art that the optical-to-electrical-to-optical signal conversions used in the implementations taught by Applicants' admitted prior art in Figure 17 would advantageously regenerate the optical signals, and one in the art would have been particularly motivated to combine the particular per wavelength switch taught by Applicants' admitted prior art in the system described by Noirie et al. in view of Wu et al. and Kuo et al. in order to provide a way to regenerate the signals in the system and thus alleviate the deterioration experienced by optical signals traveling across distances in a large network.

12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noirie et al. in view of Wu et al. and Kuo et al. as applied to claim 3 above, and further in view of DeMartino (US 6,567,429 B1).

Regarding claim 14, Noirie et al. in view of Wu et al. and Kuo et al. describe a system as discussed above with regard to claim 3, including a plurality of optical fibers and switches. They do not specifically disclose or suggest that optical fibers not requiring switching are aggregated.

However, DeMartino teach a system related to the one described by Noirie et al. in view of Wu et al. and Kuo et al. including switching wavelength multiplexed signals (Figures 9-12). They further teach aggregating fibers into groups for performing switching per group when those fibers do not requiring individual switching (see Figures 10 and 12 in particular; column 13, lines 44-63).

It would have been obvious to a person of ordinary skill in the art to switch groups of fibers together as taught by DeMartino in the switches in the system described by Noirie et al. in view of Wu et al. and Kuo et al. in order to communicate signals on those fibers more efficiently through the system (as DeMartino specifically suggests; column 13, lines 56-59). DeMartino further notes that switching fibers as a group requires less hardware (column 13, lines 59-64), and it would have been obvious to a person of ordinary skill in the art to switch groups of fibers together as taught by DeMartino in the switches in the system described by Noirie et al. in view of Wu et al. and Kuo et al. in order to simplify and save on hardware if certain groups of fibers never required individual switching.

Allowable Subject Matter

13. Claims 12 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. The following is a statement of reasons for the indication of allowable subject matter:

The prior art, including Noirie et al., Wu et al., Kuo et al., and Jue et al., does not specifically disclose or fairly suggest a system including the combination of all the elements and limitations recited in claim 12 (and including all the limitations of parent claim 1).

As discussed above with regard to claims 1, 3, 4, and 5, for example, Noirie et al. disclose an optical cross-connecting device as recited in claim 1, and the switching means described by Noirie et al. in view of Wu et al. and Kuo et al. includes a first optical switch for switching per the wavelength multiplexed signal, first wavelength group demultiplexers, second optical switches for switching per wavelength group, wavelength demultiplexers for dividing a part of the wavelength groups output from the second optical switches, and third optical switches for switching per wavelength signal and adding/drop individual wavelength signals. However, they do not specifically further disclose or suggest having wavelength groups having a first and a smaller second granularity and fourth optical switches for switching per wavelength group for a part of a plurality of wavelength groups output from the second wavelength group demultiplexers in the way recited in claim 12.

The prior art made of record and not relied upon is considered pertinent to Applicants' disclosure:

Harada et al. ("Hierarchical Optical Path Cross-Connect Systems for Large Scale WDM Networks." Feb. 1999, Optical Fiber Communication Conference OFC/IOOC '99, Technical Digest, vol. 2, pp.356-358) also generally disclose switching per wavelength group followed by switching per wavelength (Figures 2 and 3).

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christina Y Leung
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